WHAT IS CLAIMED IS:

1. An optical source generator for wavelength-division-multiplexing optical communication systems, comprising:

a pumping-light generation section for generating and outputting pumping lights;

a wavelength-division multiplexer/demultiplexer, provided with one multiplexing port and a plurality of demultiplexing ports, for wavelength-division-multiplexing and outputting optical signals inputted into the multiplexing port, and for wavelength-division-demultiplexing and outputting optical signals inputted into the demultiplexing ports;

an optical path converter for outputting the pumping lights generated and received from the pumping-light generation section to the multiplexing port of the wavelength-division multiplexer/demultiplexer by converting a path of the pumping lights, and for outputting optical signals outputted from the multiplexing port of the wavelength-division multiplexer/demultiplexer through converted paths for the optical signals;

a plurality of wavelength-dependent reflectors, each connected to one of the respective demultiplexing ports of the wavelength-division multiplexer/demultiplexer, for reflecting only optical signals that have a particular wavelength that corresponds to one of the respective said demultiplexing ports;

a plurality of optical fiber amplifiers, each having two sides one side of which is connected to one of the associated wavelength-dependent reflectors, for generating spontaneously emitted lights in response to pumping lights generated from the

pumping-light generation section; and,

a plurality of wavelength-independent reflectors, each connected to the other side of one of the respective optical fiber amplifiers, for reflecting all optical signals including said optical signals that have a particular wavelength.

2. The optical source generator according to claim 1, wherein each reflectance of the wavelength-dependent reflectors and each reflectance of the wavelength-independent reflectors are controlled independently, thereby enabling optical sources to be transmitted through the respective reflectors unilaterally or bilaterally.

3. The optical source generator according to claim 1, wherein the wavelength-dependent reflectors comprise fiber-Bragg gratings which are each connected respectively to the demultiplexing ports of the wavelength-division multiplexer/demultiplexer.

4. The optical source generator according to claim 1, wherein the wavelength-dependent reflectors comprise thin film-filter reflectors which are each connected respectively to the demultiplexing ports of the wavelength-division multiplexer/demultiplexer and have respective thin film filters.

5. The optical source generator according to claim 1, wherein the optical path converter includes an optical circulator comprising:

a first port for inputting pumping lights generated from the pumping-light generation section;

a second port connected to the multiplexing port of the wavelength-division multiplexer/demultiplexer; and,

a third port for outputting the wavelength-division-multiplexed optical signals.

6. The optical source generator according to claim 1, further comprising a plurality of modulators for using wavelength-division-multiplexed lights passing through the wavelength-independent reflectors as individual optical sources.

7. An optical source generator for wavelength-division-multiplexing optical communication systems, comprising:

a wavelength-division multiplexer/demultiplexer, provided with one multiplexing port and a plurality of demultiplexing ports, for wavelength-division-multiplexing and outputting optical signals inputted into the multiplexing port, and for wavelength-division-demultiplexing and outputting optical signals inputted into the demultiplexing ports;

a pumping-light generation section for generating and outputting pumping lights;

an optical path converter having a first port for inputting pumping lights generated from the pumping-light generation section, a second port connected to the multiplexing port of the wavelength-division multiplexer/demultiplexer, and a third port

for outputting the wavelength-division-multiplexed optical signals;

a plurality of wavelength-dependent reflectors, each connected to one of the respective demultiplexing ports of the wavelength-division multiplexer/demultiplexer, for reflecting only optical signals that have a particular wavelength that corresponds to one of the respective said demultiplexing ports;

a plurality of optical fiber amplifiers, each having two sides one side of which is connected to one of the associated wavelength-dependent reflectors, for generating spontaneously emitted lights in response to pumping lights generated from the pumping-light generation section;

a first plurality of wavelength-independent reflectors, each connected to the other side of one of the respective optical fiber amplifiers, for reflecting all optical signals including said optical signals that have a particular wavelength;

an optical band pass filter, having two sides one of which is connected to the third port of the optical path converter, for passing through only the optical source bands; and,

a second plurality of wavelength-independent reflectors, each connected to the other side of the optical band pass filter, for reflecting all optical signals including said optical signals that have a particular wavelength.

8. The optical source generator according to claim 1, wherein each reflectance of the first and second wavelength-independent reflectors is controlled independently, thereby enabling the optical sources to be transmitted through the respective reflectors unilaterally or bilaterally.